ECONOMIC IMPACT OF ANTI-LEUKEMIA MEASURES

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Article history:		Abstract:
		In these farms, the economic efficiency of health-improving anti-leukemia measures has been determined, bovine leukemia causes great economic damage to livestock due to death, forced slaughter, reduced productivity of animals with leukemia, lack of milk and offspring, violations of breeding work and requires very high costs for carrying out veterinary and sanitary measures, and carrying out a complex of health-improving anti-leukemia measures helps to prevent damage and increase the economic efficiency of veterinary and sanitary measures

INTRODUCTION. Calculations of the economic efficiency of the performed anti-leukemia health measures were carried out in accordance with the "Methodology for determining the economic efficiency of veterinary measures" (2018). At the same time, the degree of spread of bovine leukemia and the timing of recovery of farms from this disease were taken into account.

MATERIALS AND METHODS. The economic effect was determined by subtracting the amount of costs for health measures from the amount of prevented economic damage according to the formula:

$$EE = PU – ZV$$

where: PU – economic damage prevented as a result of anti-leukemia measures, sum;
ZV – costs of veterinary and sanitary measures, sum.

The economic damage prevented as a result of prevention and elimination of leukemia was determined by the formula:

$$PU = M \, KZ \, KU – SF$$

where: M is the number of susceptible animals, head;
KZ is the coefficient of possible morbidity;
KU – damage coefficient per sick animal;
SF – actual economic damage, sum.

At the first stage of the research, the economic damage from bovine leukemia was determined. The economic damage consists of losses from the loss of milk and offspring, from the death and forced slaughter of cows with leukemia and from the loss of breeding value of heifers infected with VLKRS.

The damage from death and forced slaughter was calculated according to the formula:

$$Y1 = M \, W \, C – SF$$

where: M is the number of fallen, forcibly killed animals or disposed carcasses;
W – average live weight of one animal, kg;
C – purchase price of 1 kg of live animal weight, sum;
SF – proceeds from the sale of slaughter products, cadaveric raw materials, sum.

The damage from a decrease in productivity due to the disease was determined by the formula:

$$Y2 = MZ \, (VZ – VB) \, T \, C$$

where: MH - the number of sick animals, head.;
VZ – VB – the average daily amount of products (milk), received respectively from healthy and leukemic animals;
T is the average duration of overexposure of sick animals on the farm, days;
C – purchase price of 1 kg of milk, sum.

The damage from the loss of breeding value of infected heifers was determined by the formula:

$$U3 = M \, (CP – CU)$$

Where: M is the number of breeding heifers infected with VLKRS;
CP – TSU – the average selling price of breeding and lost breeding value of animals.

The total amount of damage was calculated by summing up all the components of the damage:

$$Y = Y1 + Y2 + . . . UP$$

RESULTS AND DISCUSSION. The damage coefficient per sick animal was determined by dividing

the total amount of economic damage by the number of sick animals. When calculating the economic damage, the following purchase prices were taken into account: 1 kg of milk 5.0 thousand soums; 1 kg of live weight in a commodity farm 30.0 thousand soums and 45.0 thousand soums – in a breeding farm; the average live weight of one sick animal – 380.0 kg; daily milk losses from sick animals – 2.0 kg; overexposure of animals with leukemia in the farm has an average of 50 days; the actual selling price of breeding young animals is 18 million. soums; the average live weight of breeding young animals when sold is 350.0 kg.

In general, the costs of veterinary and sanitary measures consisted of the costs of forced disinfection, diagnostic tests, the cost of spent reagents, tools, the wages of veterinary workers and the costs of maintaining maintenance personnel in each farm. The total cost of veterinary and sanitary measures to combat bovine leukemia, according to the Laboratory of Economics (report of the Laboratory of Economics for 2020), per animal is 251.3 thousand soums.

As a result of the conducted research, it was found that in the farm "Adiz Bobo" the total economic damage from leukemia of cattle amounted to 156835 thousand soums, including from the death of sick animals – 26620 thousand. sum, from forced slaughter – 37240 thousand soums, from a decrease in milk productivity – 3600 thousand soums. The greatest economic damage (89375 thousand soums) in the farm is due to the loss of breeding value of infected heifers due to the prohibition of the sale of breeding animals. The damage coefficient per sick animal was 7495.5 thousand soums.

The amount of prevented economic damage, as a result of prevention and elimination of leukemia, in this farm amounted to 306744.5 thousand soums. The total cost of carrying out veterinary and sanitary measures on the farm is 138215 thousand soums. At the same time, the economic effect of carrying out recreational activities in this farm amounted to 168529.5 thousand soums, and the economic efficiency per animal – 306.4 thousand soums.

Similar calculations were carried out in the farms "Hadicha", "Buston Nazar", "Ulmasbek-Rukhshona", "Romitan", "Korakir chorvasi" and "Bokhodir". It was found that the extent of economic damage and the economic effectiveness of health measures depended on the degree of spread of leukemia in farms, the number of susceptible animals and the timing of recovery. Thus, in farms where the incidence rate is relatively low and the number of cattle is large, the annual economic effect of health measures is much greater than in other farms where the number of animals is somewhat smaller and the incidence rate is higher **(Table 1).**

Economic efficiency of anti-leukemia measures

№	Name of farms	Actual damage from leukemia, thousands of soums	Prevented economic damage, thousands of soums	Costs of anti-leukemia measures, thousands of soums	Economic effect, thousands of soums	
					on the farm	per animal
1	"Adiz bobo" farm	156835,0	306744,5	138215,0	168529,5	306,4
2	"Hadicha" farm	133060,0	241956,0	113085,0	128871,0	286,3
3	"Buston Nazar" farm	142995,0	269715,0	125650,0	144065,0	288,1
4	"Ulmasbek - Rukhshona" farm	213770,0	240778,0	75390,0	165388,0	551,2
5	"Korakir chorvasi" farm	119430,0	959390,0	376950,0	582440,0	388,2
6	"Bokhodir" farm	159555,0	1026195,0	314125,0	712070,0	569,6
On average		154274,1+-12578,64	507463,0+-181319,0	190569,+-57912,96	316893,9+-123422,89	398,3+-60,56

Thus, the economic efficiency of recreational activities for one breeding farm is on average 316893.9 thousand soums, and for one animal – 398.3 thousand soums. At the same time, the amount of economic

damage from leukemia per household averaged 154274.1 thousand soums. And for one cash animal – 297.7 thousand soums

CONCLUSIONS. In conclusion, it can be stated that leukemia of cattle causes great economic damage to animal husbandry due to death, forced slaughter, reduced productivity of animals with leukemia, lack of milk and offspring, violations of breeding work and requires very high costs for veterinary and sanitary measures. Consequently, carrying out a complex of health-improving anti-leukemia measures helps to prevent damage and increase the economic efficiency of veterinary and sanitary measures.

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